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ABSTRACT

By entering into partnerships with business and industry, community colleges are able to offset the high cost of remaining current with training techniques, job market skill requirements, and state-of-the-art hardware. The construction of advanced technology centers (ATCs) located on community college campuses is one key element supporting these partnerships. Moraine Valley Community College (MVCC) in Palos Hills, Illinois, established an ATC to serve as a magnet for local business and industrial activity geared toward keeping workers abreast of the latest technological advancements. The process followed by MVCC entailed two stages: formulating basic directions and creating services and facilities to support those basic directions. The following basic directions emerged from the MVCC experience in modifying their continuing education program to establish an ATC: (1) important leaders of the economic community should be brought together to determine future priorities in terms of programs and services to meet the needs of the local economy; (2) the philosophy and major goals behind initiatives with business and industry should be determined; and (3) the philosophy and goals of economic development should be discussed, tested, redefined, and then disseminated so that everyone understands and endorses them. (MN)

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COMMUNITY COLLEGE ADVANCED TECHNOLOGY CENTERS: MEETING AMERICA'S NEED FOR INTEGRATED, COMPREHENSIVE ECONOMIC DEVELOPMENT

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COMMUNITY COLLEGE ADVANCED TECHNOLOGY CENTERS: MEETING AMERICA'S NEED FOR INTEGRATED, COMPREHENSIVE ECONOMIC DEVELOPMENT

Contemporary American Business and Industry In International Perspective

As ample statistics and experience attest, the United States has suffered serious decline in its business and industrial bases throughout the 1980s. The steep drop since 1985 in the value of the dollar *vis-á-vis* major foreign currencies is unlikely to provide more than a temporary respite from our country's worsening balance of industrial trade, for America's foreign competitors are growing both in number and in technological efficiency. Even computer electronics, not long ago thought to be one of America's few domains of secure preeminence, faces tough times: the U.S. now experiences a trade deficit in this area with Japan and is being challenged from several other quarters as well.

To regain the overwhelming international dominance they enjoyed in the first decades after World War II would clearly be an unrealistic goal for American business and industry. The world economic stage simply holds too many new and vigorous players. But changes in the world economy may bode worse status than a place among equals for the United States. If current trends persist, the rising rate of competition from overseas leads some to believe that the American people will eventually face substantial degradation in their standard of living.

One key reason why America's quest for renewed recognition and position in the international marketplace is imperiled is that competitors are expending tremendous energy toward exploiting technological innovations as they arise. As the *Chicago Tribune* has pointed out (Goozner, 1988), almost all our nation's economic adversaries have boosted their industrial productivity throughout the 1980s at a greater rate than we

have. Because increases in the volume and quality of goods produced in coming decades will continue to depend primarily upon technological advances, it is imperative for the United States to find ways to amplify its own capability for inventing and marketing the fruits of advanced technology.

An understanding of the world technological/economic challenge has percolated through political and economic leadership structures in most parts of this country. In fact, spirited rivalries have developed among communities and states as they attempt to attract new high-tech industries which may generate jobs, develop supplier markets, and bolster the nation's progress toward international competitiveness.

The Role of Community College Advanced Technology Centers

America's community colleges are being recognized for the vital role they play in upgrading and revitalizing America's industrial base. Many of these uniquely American higher educational institutions have, in fact, begun to launch novel, farsighted initiatives to this end. By entering partnerships with business and industry, community colleges are able to offset the high cost of remaining current with training techniques, job market skill requirements, and state-of-the-art hardware.

One key element supporting these partnerships is the construction of Advanced Technology Centers--ATCs--on community college campuses. In an address to the newly-formed National Coalition of Advanced Technology Centers, Robert Ady, President of FANTUS Corporation, highlighted the potential of community college ATCs. According to Ady, whose firm locates companies on a worldwide scale and lists many Fortune 500 companies among its clients, the availability of appropriate educational opportunities is now the single most important factor considered by businesses which plan to relocate (Ady, 1988).

The process employed by Moraine Valley Community College to enhance its stature as a magnet for the kinds of business and industrial activity described by Ady has centered around the development of its own advanced technology center, the Center for Contemporary Technology. This process may, thus, serve as an example to other colleges around the nation working to favorably influence the economic vitality of their communities. Two stages composed this process: 1) formulating basic directions, and 2) creating services and facilities to support those basic directions.

Formulating Basic Directions

Formulating economic development strategies requires tremendous participation on the part of the community. When the administration at Moraine Valley Community College first began to appreciate the need for the college to act as an agent of community commercial revitalization, it conducted a major survey of all nearby businesses and industries to determine their training needs, ascertain their growth or retrenchment strategies, and establish the name of Moraine Valley as a partner in employee development. Governmental, business, and industrial leaders of the twenty-six communities within the college's district were approached to form a unified Economic Development Commission, which soon began to obtain input and aggressively market the area as a willing partner of commerce.

For other institutions around the United States, the following basic directions may be important sources of guidance as they contemplate building advanced technology centers:

Basic Direction 1: Important leaders of the economic community should be pulled together to decide what is important to them for the future in terms of programs and services to meet the needs of the local economy. Moraine Valley invited business leaders to a focus group which elicited

their thinking on trends, problems, requirements, and needs. Through interacting with one another in this group, rather than with college personnel, the members enunciated trends in manufacturing, communications, personnel, quality control, etc. and pinpointed the relative importance of each in the economic well-being of the area and the country. Together, consensus was reached on the kinds and configuration of training programs which would best support business and industry in their quest to increase quality and competitiveness. These results of the meeting gave substantial direction and purpose to Moraine Valley as it began to contemplate the construction of an advanced technology center.

Basic Direction # 2: The philosophy and major goals behind initiatives with business and industry should be determined. Strategic goals require that attention be paid to the shorter-range goals and objectives that will allow for the long-range vision to be realized. Moraine Valley positioned itself to be the impetus behind economic development. While not overshadowing the endeavors and accomplishments of its community partners, it served as a location to hold meetings, as a medium for executives to share ideas, and as a provider of resources. In many instances, the college consciously brought together industry C.E.O.'s who potentially could do business with one another.

Basic Direction # 3: The philosophy and goals of economic development should be discussed, tested, redefined, and then disseminated so that everyone understands and endorses them. General business advisory committees, specific program advisory committees, Rotary Clubs, cross-divisional faculty and administration task groups, and other mechanisms were employed by Moraine Valley as forums to disseminate the vision which had arisen out of the crucible of discussion. The reorientation of many college services was discussed

in relation to the economic development initiatives to allow all parties abundant opportunities for both understanding and for input. Philosophy statements, strategic goals and budgetary impact planning were all the subject of scrutiny.

Creating Services and Facilities

Once basic directions have been established, thereby clarifying the parameters of a community college's interactions with business and industry, the college itself must marshal its existing resources and create new ones to provide the expertise and facilities necessary for advanced training. Moraine Valley's basic programs were comprehensive, including such disciplines as machine tool technology, computer programs, and drafting; nevertheless, however, continuity of purpose and direction among those programs was seen to be of pressing importance to the economic development of the surrounding community.

New Units

To initiate this continuity and unity, the college began by modifying a segment of its continuing education unit into a division which would target business and industry for specific, customized training. This new entity, the Employment Training Center (ETC), quickly developed new training modules to address specific company requirements through a combination of new curricula and restructured versions of existing ones. At about this same point, a government contract procurement center, a small business assistance center, and a variety of in-plant training programs were established.

The Center for Contemporary Technology

Because space on its campus was scarce, the college soon realized that it would need to construct a new facility in which to concentrate the economic development services it had inaugurated and whose activities it was beginning to plan. After

securing commitments of more than $13 million in local and state funding, Moraine Valley formed a large cross-divisional, multi-level committee to promulgate a philosophy statement for the facility.

The essence of this philosophy statement stated that the building would serve as an instrument for community economic development for the community. The following sub-principles comprised the statement:

a. The building would house both credit and non-credit programs delivering business and industry-related curriculums.

b. Laboratories and facilities would be used by both credit and non-credit programs to maximize the use of high-cost resources.

c. Full-time credit faculty would assist in developing training and in-plant programs for business and industry; write modules; teach; supervise the quality of part-time instructors; and make sales calls with personnel from the ETC.

d. Partnerships would be sought with business and industry to obtain materials and expert guidance.

e. Small business assistance, government contracts procurement, and dislocated worker assistance services would be integrated into the building.

f. Technology transfer and business incubator capabilities would be provided with space in the building.

g. The building would become a marketing tool of its own by means of a technology theater for meetings and trade shows, as well as windows in every hallway to permit views of laboratory activity in progress.

In planning for the building, faculty and administrators made several trips to other colleges to determine how they had addressed issues surrounding such an undertaking. Among the community and technical colleges visited in this process, it

was found that facilities for credit and non credit programs were generally separated. As facilities were rarely used to capacity and the various units of the schools were often at odds with one another in purpose and direction, this practice of separation appeared wasteful. Dysfunctional competition for resources seemed widespread. Thus, joint facilities were determined to be the most advantageous arrangement.

As the very first architectural renderings of the Center for Contemporary Technology were being created, prototype shared laboratories and staff arrangements were designed which allowed the credit and ETC programs to practice the art of compromise in using college resources. Prototypes allowed for problems of shared resources to be found and addressed before the building was complete.

Full-time faculty, who tend to be the keepers of both curriculum quality and of facilities, were given opportunities to design the training programs for business and industry to assure the best pedagogical approach and articulation with their credit courses and programs. These faculty were also used as consultants for industry, actually going on sales calls and analyzing the needs of the client businesses. Finally, they were called upon to teach courses and find qualified part-time faculty, which in turn improved their own skills.

Both before and after the completion of the 120,000-square-foot CCT in August 1988, an aggressive stance was taken to develop some premier programs for the facility and to use industry partnership arrangements wherever possible. Two examples are illustrative.

First, by upgrading the skills of the drafting faculty, hiring talented new faculty, and investing in new hardware, the college was able to catch the attention of AutoDesk Corporation and become one of that firm's nationally-designated Authorized Training Centers. After calling for an initial investment in software on the part of Moraine

Valley, AutoDesk now provides all updates and new products at no cost to low cost. This arrangement allows the college to attract clients to workshops; meanwhile, income from these workshops helps keep the hardware current. AutoDesk gets quality training for its user base while the college retains its currency in the CAD industry and provides the latest in hardware and software to local business and industry. Second, the college's success with AutoDesk recently impressed IBM Corporation sufficiently for it to name Moraine Valley one of its partners in a national alliance for Computer Integrated Manufacturing (CIM). This designation brings with it hardware, software, assistance, and training of personnel.

As one visiting businessman stated, "It's not the leading edge anymore, it's the bleeding edge." In other words, staying in front of the trends and anticipating the needs of business exacts a high price and can only be accomplished through persistence and hard work.

The Center for Contemporary Technology was designed with space in which entrepreneurs or companies could incubate new ideas or test out the commercialization of products developed by research. Today, two companies lease space on the campus, one commercializing ideas for using specialized transducers to locating hazardous spills and the other developing new applications for electron microscopes. If these two fledgling firms grow stronger within Moraine Valley's supportive incubator environment and later move out into the community, several significant benefits will accrue. The college's tax base will grow, and more workers will be employed. In turn, these new employees are apt to seek training from the college, send sons and daughters to the college, and return to give valuable advice on advisory committees.

One final important feature of Moraine Valley's Center for Contemporary Technology is its suitability for demonstrations of hardware through which business

and industry representatives could directly observe the design, testing, or manufacture of new products. In the CCT's technology theater, the feasibility of improving quality and productivity through the use of computer-driven hardware can be tangibly depicted. Such an ability to show how the newest technology can improve a firm's bottom line is the essence of technology transfer.

Conclusion

In formulating its basic directions and then creating services and facilities to support them, Moraine Valley Community College took a global approach to economic development. It acted as a planner and an organizer, putting its own resources to work in a coordinated fashion. It involved significant government and business officials as well as its own faculty and staff members. It rallied the community and gave an independent life to the cause of economic development. It built an advanced technology center and assumed the challenge of keeping that building and its programs current and relevant to training and retraining needs. It determined to provide leadership and direction to the automation of industry. In sum, it became a partner in spearheading an integrated and comprehensive approach to economic development whose outcomes stand as a successful example for others to model or modify in their own communities. As other community colleges follow this example, the campaign for America to attain full-speed technological progress will surely be aided.

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